Product ID:SAFETY-SILV 1200 MSDS Date:10/01/1992 FSC:3439 NIIN:01-046-3655 MSDS Number: BGHPN === Responsible Party === Company Name:JW HARRIS CO INC Address:10930 DEERFIELD RD City:CINCINNATI State:OH ZIP:45242 Country:US Info Phone Num:513-891-2000 Emergency Phone Num:800-424-9300 (CHEMTREC) CAGE:HO350

=== Contractor Identification === Company Name: J. W. HARRIS CO., INC. Address:10930 DEERFIELD ROAD Box:City:CINCINNATI State:OH ZIP:45242-4110 Country:US Phone:513-891-2000 CAGE:27911 Company Name: JW HARRIS CO INC Address:10930 DEERFIELD RD Box:City:CINCINNATI State:OH ZIP:45242 Country:US Phone:513-891-2000 CAGE:HO350

Ingred Name:SILVER (SARA 313) (CERCLA) CAS:7440-22-4 RTECS #:VW3500000 Fraction by Wt: 56% OSHA PEL:0.01 MG /M3 ACGIH TLV:0.1 MG/M3 EPA Rpt Qty:1 LB DOT Rpt Qty:1 LB

Ingred Name:COPPER (SARA 313) (CERCLA) CAS:7440-50-8 RTECS #:GL5325000 Fraction by Wt: 22% OSHA PEL:0.1MG/M3 FUME;1 DUST ACGIH TLV:0.2 MG/M3 FUME EPA Rpt Qty:5000 LBS DOT Rpt Qty:5000 LBS

Ingred Name:ZINC OXIDE (SARA 313) (CERCLA) CAS:1314-13-2 RTECS #:ZH4810000 Fraction by Wt: 17% OSHA PEL:15 MG/M3 TDUST ACGIH TLV:10 MG/M3 TDUST

Ingred Name:TIN CAS:7440-31-5 RTECS #:XP7320000 Fraction by Wt: 5% OSHA PEL:2 MG/M3 ACGIH TLV:2 MG/M3

Ingr ed Name:BORATE (1-), TETRAFLUORO-, POTASSIUM; (POTASSIUM FLUOBORATE AS F) CAS:14075-53-7 RTECS #:ED2800000 OSHA PEL:N/K ACGIH TLV:N/K

Ingred Name:POTASSIUM METABORATE; (BORIC ACID) CAS:11113-50-1 OSHA PEL:10 MG/M3 BORATE ACGIH TLV:5 MG/M3 BORATE

Ingred Name:POTASSIUM BORATE; (POTASSIUM TETRABORATE AS BORATES) CAS:1332-77-0 OSHA PEL:N/K ACGIH TLV:N/K

Ingred Name:SUPDAT: W/RESPECT TO FUME PLUME AS WELL AS PRESENCE OF CONTAMINANTS IN ATM (SUCH AS CHLORINATED HYDROCARB VAPS (ING 9) RT

ECS #:9999999ZZ

Ingred Name:ING 8: FROM CLEANING & DEGREASING ACTIVITIES). WHEN FILLER METAL IS CONSUMED, FUME & GAS DECOMP PRODS GENERATED (ING 10) RTECS #:9999999ZZ

Ingred Name:ING 9:ARE DIFFERENT IN PERCENT & FORM FROM LISTED SOLID WIRE/ROD INGREDS. FUME & GAS DECOMP PRODS & NOT INGREDS (ING 11) RTECS #:9999999ZZ

Ingred Name:ING 10: IN ROD/WIRE ARE IMPORTANT. CONC OF GIVEN FUME/GAS COMPONENT MAY DECR OR INCR BY MANY TIMES THE ORIGINAL (ING 12) RTECS #:9999999ZZ

Ingred Name:ING 11:CONC IN FILLER METAL. DECOMP PRODS OF NORM OPERATION INCL THOSE ORIGINATING FROM VOLATILIZATION REACTION (ING 13) RTECS #:99999992Z

Ingred Name:ING 12: OF THE WIRE. RTECS #:99999992Z

Ingred Name:VENT: EMPLOYEE TO KEEP HIS/HER HEAD OUT OF THE FUMES. SEE ANSI/ASC Z49.1 SECTION 5. RTECS #:9999999ZZ

Ingred Name:EYE PROT: & FULL LENGTH FACESHIELD . USE FACESHIELD W/FILTER LENS OF APPROP SHADE NUMBER (SEE ANSI/ASC (ING 16) RTECS #:9999999ZZ

Ingred Name:ING 15: Z49.1-SECTION 4.2). P ROVIDE PROT SCREENS & FLASH GOGGLES, IF NECESSARY, TO SHIELD OTHERS. RTECS #:99999992Z

Ingred Name:OTHER PROT EQUIP: INCL WELDER'S GLOVES & PROT FSHLD & MAY INCL ARM PROTECTORS, APRONS, HATS, SHOULDER PROT, AS (ING 18) RTECS #:9999999ZZ

Ingred Name:ING 17: WELL AS DARK SUBSTANTIAL CLOTHING. RTECS #:99999992Z

LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER. Routes of Entry: Inhalation:YES Skin:NO Ingestion:NO Repo rts of Carcinogenicity:NTP:NO IARC:NO OSHA:NO Health Hazards Acute and Chronic: ACTUAL EXPOS SHOULD BE DETERMD BY MONITORING FUME IN OPERATOR'S BRTHG ZONE. COPPER & ZINC FUME MAY CAUSE METAL FUME FEVER. SHORT TERM SYMPS MAY INCL METALLIC TASTE IN MOUTH, DRYNESS/IRRIT OF THROAT FO LLOWED BY COUGH, SHORTNESS OF BRTH, NAUS, FEVER, BODY ACHES & CHILLS. LONG TERM EXPOS TO WELDING FUME, (EFTS OF OVEREXP) Explanation of Carcinogenicity:NOT RELEVANT Effects of Overexposure:HLTH HAZ : GASES OR DUST MAY CONTRIBUTE TO PULM IRRIT OR PNEUMOCONIOSIS. BRAZING ALLOYS ARE FREQUENTLY USED W/FLUORIDE TYPE FLUX. IF APPLICABLE, FLUX FUME SHOULD BE CONSIDERED IN EVALUATION OF HAZARDS. Medical Cond Aggravated by Exposure: INDIVIDUALS WITH IMPAIRED PULMONARY FUNCTIONS OR ILLNESS MAY HAVE SYMPTOMS EXACERBATED BY FUME IRRITANTS. First Aid:INGEST: CALL MD IMMEDIATELY . EYES: IMMEDIATELY FLUSH W/POTA BLE WATER FOR A MINIMUM OF 15 MINUTES, SEEK ASSISTANCE FROM MD . SKIN: FLUSH W/COPIOUS AMOUNTS OF WATER. CALL MD . INHAL: REMOVE FROM DUST OR FUME EXPOSURE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. SUMMON MEDICAL AID IMMEDIATELY. Flash Point:NONFLAMMABLE Extinguishing Media: MEDIA SUITABLE FOR SURROUNDING FIRE . Fire Fighting Procedures: USE NIOSH/MSHA APPROVED SCBA AND FULL **PROTECTIVE EQUIPMEN** Τ. Unusual Fire/Explosion Hazard: OPEN FLAME AND SPARKS CAN IGNITE COMBUSTIBLES. Spill Release Procedures:NOT APPLICABLE. Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

Handling and Storage Precautions:READ & UNDERSTAND MFR'S INSTRUCTIONS & LABEL ON PROD. SEE SNSI/AWS PUBLICATION, "SFTY IN WELDING & CUTTING" & OSHA 29 CFR 1910 FOR MORE DETAIL

Other Precautions:ONE REC WAY TO DETERM COMPOSITION & QTY OF FUMES & GASES TO WHICH WORKERS ARE EXPOS IS TO TAKE AIR SAMPLE IN WORKER'S BRTHG ZONE. SEE ANSI/AWS F1.1 AVAIL FROM AWS. PRODS ARE SHIPPED NONHAZ, NONFLAMM, NONEXPLO & NONREACTIVE SOLID MATLS.

======= Exposure Controls/Personal Protection ==========

Respiratory Protection:USE NIOSH/MSHA APPROVED RESPIRABLE FUME RESPIRATOR OR AIR SUPPLIED RESPIRATOR WHEN BRAZING IN CONFINED SPACE OR WHERE LOCAL EXHAUS

T OR VENTILATION DOES NOT KEEP EXPOSURE BELOW TLV.

Ventilation:USE ENOUGH VENT, LOC EXHST AT FLAME TO KEEP FUMES & GASES BELOW TLV'S IN WORKER'S BRTHG ZONE & GEN AREA. TRAIN (ING 14) Protective Gloves:WELDER'S GLOVES.

Eye Protection: ANSI APPRVD CHEM WORKERS GOGGS (ING 15)

Other Protective Equipment:WEAR HEAD & BODY PROT WHICH HELP PVNT INJURY FROM HEAT, RADIA, SPKS & FLAME. SEE ANSI 149.1. AT MINIMUM THIS (ING 17)

Work Hygienic Practices:NONE SPECIFIED BY MANUFACTURER.

Supplement

al Safety and Health

HAZ DECOMP PROD: PROCESS, PROC & FILLER METALS USED. OTHER CNDTNS WHICH INFLUENCE COMPOSITION & QTY OF FUMES & GASES WHICH WORKERS MAY BE EXPOS INCL: COATING ON METAL BEING BRAZED (SUCH AS PAINT/PLATI NG/GALVANIZING), NUMBER OF OPERATORS & VOL OF WORK AREA, QUALITY & AMT OF VENT, POSITION OF OPERATOR'S HEAD (ING 8)

HCC:N1

Appearance and Odor:NONE SPECIFIED BY MANUFACTURER.

Stability Indicator/Materials to Avoid:YES
NONE SPECIFIED BY MANUFACTURER.
Stability Condition to Avoid:NONE SPECIFIED BY MANUFACTURER.
Hazardous Decomposition Products:BRAZING FUMES & GASES CANNOT BE
CLASSIFIED SIMPLY. COMPOSITION & QTY ARE BOTH DEPENDENT ON METAL
BEING BRAZED, (SUPDAT)

Waste Disposal Methods:DISPOSAL MUST BE IN ACCORDANCE WITH FEDERAL, STATE A

ND LOCAL REGULATIONS .

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